

THROWING AND CATCHING TRAINING APPARATUS

Field of the Invention

The invention relates generally to sports practice aids, and more particularly, to a throwing and catching training apparatus for sports, such as baseball and softball.

Background of the Invention

Sports utilizing a thrown or struck projectile, such as baseball and softball, have become extremely popular worldwide. As a result, a wide variety of training and practice aids have been developed to improve players' abilities in all aspects of these types of sports.

One popular training aid is a target utilized to develop a player's accuracy in throwing a ball. Both baseball and softball players utilize devices which are designed expressly for the development of throwing accuracy, generally referred to as "pitching targets". Many of these targets are primarily composed of netting or a mesh which is maintained under tension or spring-loading, provide a recoil or rebound of a pitched ball. Many of these targets are primarily designed, however, in such a way that the return angle of a projectile is relatively constant.

While these type of devices meet the needs of developing pitching accuracy, they are deficient, however, in that they neglect the development of fielding techniques. While there have been prior efforts toward developing targets which produce a more random return angle as a thrown baseball or softball rebounds, these devices have been successful in producing only very limited variance in the angles of deflection, particularly vertical deflection. Further, the known devices tend to be predictable in their rebound, providing only limited benefits for

training purposes.

Many of the prior art devices also have limitations in that they are relatively complex, consist of a large number of individual components, require substantial assembly and disassembly effort, and are accordingly heavy and unwieldy.

A need exists, therefore, for a new sports training aid which will provide a random rebound to a thrown projectile, wherein the training aid is constructed of as few assembly parts as possible, is easy to set up and break down, and is lightweight and convenient to store.

It would be desirable to provide a sports training aid which would assist in developing fielding techniques, by providing an apparatus for causing a thrown projectile to rebound at random arbitrary angles, simulating the environment in an actual game, wherein the player reacts to the direction of a deflected ball without being able to effectively anticipate in which direction the ball will be deflected.

It would also be desirable to permit more than one user to utilize the training target simultaneously. With randomly generated deflections, more than one user can occupy the space wherein the ball will be returned, further and more closely simulating an actual fielding environment.

Summary of the Invention

The present invention is a throwing and catching training apparatus for sports, such as baseball and softball. The apparatus includes an upright, substantially rigid target panel. At least one bumper is connected to the target panel and is adaptable to deflect a thrown projectile in a random direction. At least one support structure is connected to the target panel for supporting the target panel in an upright position.

The target panel may have a cut-out portion extending through said target panel for further defining a target. An elastic material is connected to the target panel and extends across the cut-out portion of the target panel. The elastic material is adaptable to spring the thrown projectile in a reverse direction when the thrown projectile engages the elastic material.

The at least one bumper may be fabricated from an elastomeric material and may have a substantially cylindrical stem that is releasably connected to the target panel. A substantially circular, dome-shaped head may be integrally connected to the stem and extend away from the target panel for deflecting the thrown projectile in a random direction.

Brief Description of the Drawings

FIG. 1 is a perspective view showing the front of the throwing and catching training apparatus of the present invention.

FIG. 2 is a perspective view showing the rear of the throwing and catching training apparatus of the present invention.

FIG. 3 is a front plan view of the throwing and catching training apparatus of the present invention.

FIG. 4 is a sectional view of the throwing and catching training apparatus of the present invention in the direction of arrows 4-4 in Fig. 3.

Detailed Description of the Embodiment

Referring to the drawings, the present invention will now be described in detail with reference to the disclosed embodiment.

Figs. 1-4 illustrate a throwing and catching training apparatus **10** for sports, such as baseball and softball. The apparatus **10** provides an upright, substantially rigid target panel **12** having a plurality of elastomeric bumpers **14** releasably connected thereto. The elastomeric bumpers **14** are adaptable to deflect a thrown projectile, such as a baseball or softball (not shown), in a random direction relative to the initial direction of the thrown projectile. The target panel **12** has a cut-out portion or window **16** that extends through the target panel **12** for further defining a target. An elastomeric material **17** is connected to the target panel **12** and extends across the cut-out portion **16** to spring the thrown projectile back in the direction in which the projectile was thrown when the thrown projectile engages the elastomeric material **17**. A pair of support structures **18** are releasably connected to the target panel **12** to maintain the target panel **12** in an upright position.

For the purpose of withstanding the impact of the thrown projectile, the target panel **12** may be fabricated from a polymeric material, such as a molded plastic, which provides the target panel **12** with a substantially rigid characteristic. Although the target panel **12** may be described as rigid, the polymeric material provides a certain amount of flexibility so that the target panel **12** will not crack or break upon realizing the impact of the thrown projectile. The target panel **12** has a substantially rectangular configuration with a front side **20** and a back side **22**. The front side **20** of the target panel **12** has a substantially smooth surface with a plurality of apertures **30** extending therethrough whereas the back side **22** of the target panel **12** has a lattice structure **24** having horizontal elements **26** and vertical elements **28**. The intersection of the horizontal elements **26** and the vertical elements **28** of the lattice structure **24** define the apertures **30** that extend therethrough for receiving the bumpers **14** of the

apparatus 10.

To maintain the target panel 12 in an upright position, the support structures 18 are preferably mounted on opposite sides of the target panel 12. The support structures 18 are fabricated from a polymeric material, such as a molded plastic, thereby making the support structures 18 high strength, lightweight, and relatively inexpensive. The support structures 18 have a substantially triangular configuration having a horizontal leg 32 that extends along the ground substantially perpendicular to the target panel 12, a vertical leg 34 that extends adjacent sides of the target panel 12, and a cross member or angular leg 36 that extends at an angle between one end of the vertical leg 34 and one end of the horizontal leg 32. The horizontal leg 32, vertical leg 34, and the angular leg 36 are integrally molded to form homogeneous support structures 18.

It is contemplated that to releasably connect the target panel 12 to the support structures 18, an upper brace 38 and a lower brace 39 are integrally formed on each end of the vertical leg 34 of the support structure 18. The upper and lower braces 38, 39 have a substantially U-shaped configuration wherein the opening of the U-shape opens to the target panel 12 so as to receive side portions of the target panel 12. A slide or snug fit is provided between the upper and lower braces 38, 39 and the target panel 12 such that the target panel 12 does not move upon being struck by the thrown projectile. The slide or snug fit also allows for the support structures 18 to be easily separated from the target panel 12 for easy assembly and disassembly of the apparatus 10.

To provide a target by which to throw the thrown projectile, the cut-out portion 16 of the target panel 12 has a substantially rectangular configuration. The elastomeric material 17

may include an elastic mesh netting **40** that is connected to the back side **22** of the target panel **12** by a conventional fastening means such that the elastic mesh netting **40** extends across the cut-out portion **16** of the target panel **12**. The elastic mesh netting **40** is substantially taut so that the thrown projectile springs back upon engaging the elastic mesh netting **40** in the direction from which the projectile was thrown. A visual target indicia **42** may be included in the elastic mesh netting **40** by weaving a ribbon fabric through the elastic mesh netting **40** to form a substantially rectangular configuration. The visual target indicia **42** further defines a target by which to aim the thrown projectile. The visual target indicia **42** may provide a more accurate return of the thrown projectile if the thrown projectile engages the elastic mesh netting **40** within the area defined by the visual target indicia **42** since the elastic mesh netting **40** is more evenly supported by the target panel **12** within the visual target indicia **42** as opposed to outside the visual target indicia **42**.

For the purpose of deflecting the thrown projectile in a random direction, the bumpers **14** are releasably connected to the target panel **12** in an equally spaced fashion. The bumpers **14** are vertically and horizontally aligned in columns and rows that are substantially perpendicular to one another and that correspond to the vertical elements **28** and the horizontal elements **26** of the lattice structure **24**. The rows and columns of bumpers **14** form three concentric rectangles, wherein the cut-out portion **16** is substantially centered within the smallest of the three rectangles. Each bumper **14** includes a substantially cylindrical stem **44** having an integral substantially circular dome-shaped head **46** formed on one end of the stem **44**, and a threaded shaft **45** extending from the opposite end of the stem **44**. The threaded shaft **45** and a portion of the stem **44** are received by the apertures **30** provided in the

intersection of the horizontal elements **26** and the vertical elements **28** of the lattice structure **24**. The threaded shaft of the stem **44** extends beyond the lattice structure **24** that defines the apertures **30**, and a nut **48** and a washer **50** are releasably threaded onto the threaded shaft until the nut **48** and washer **50** abut the lattice structure **24**. The nut **48** and the washer **50** maintain the bumper **14** in a fixed position relative to the target panel **12** while also allowing the bumpers **14** to be removed and replaced with various sized bumpers if the user so desires. The bumpers **14** are fabricated from an elastomeric material, such as rubber, so that the thrown projectile will bounce off of the bumpers **14** and be deflected back to the user. In addition, the dome-shaped head **46** of the bumpers **14** is substantially hemispherical so that the thrown projectile will bounce back to the user in a random direction depending on what portion of the head **46** of the bumper **14** the thrown projectile engages and whether more than one bumper **14** is engaged by the thrown projectile. Various sized bumpers **14** may be utilized depending on the size of the thrown projectile utilized and depending on the random angularity of the deflection of the thrown projectile so desired.

In operation, the support structures **18** are connected to the target panel **12** by inserting the sides of the target panel **12** into the upper and lower braces **38**, **39** of the support members **18**. The support structures **18** maintain the target panel **12** in its upright position. A user faces the front side **20** of the target panel **12** at a desired distance and throws the projectile, such as a baseball or softball, at the target panel **12**. If the elastic mesh netting **40** is hit by the thrown projectile, the thrown projectile will generally spring back to the user in the direction in which the projectile was thrown. If the thrown projectile engages the bumpers **14**, the thrown projectile will deflect back at a random angle or direction to the user, thereby allowing the user to practice fielding the projectile.

While the invention has been described in connection with what is presently considered to be the most practical and preferred embodiment, it is to be understood that the invention is not to be limited to the disclosed embodiments, but to the contrary, it is intended to cover various modifications or equivalent arrangements included within the spirit and scope of the appended claims. The scope is to be accorded the broadest interpretation so as to encompass all such modifications and equivalent structures as is permitted under the law.